

WHAT IS CLAIMED IS:

1. An image forming apparatus comprising:  
an image bearing member including a plurality  
of switching <sup>2</sup>elements that are arranged in a moving  
5 direction and a generatrix direction of said image  
bearing member; and

latent image forming means for forming a latent  
image on said image bearing member, said latent image  
forming means including a voltage generating means  
10 for generating a voltage in each switching element in  
accordance with an image signal.

2. An image forming apparatus according to  
claim 1,  
15 wherein each switching element includes  
electrodes and at least one of said electrodes is  
formed using an organic semiconductor.

3. An image forming apparatus according to  
20 claim 1,  
wherein said image bearing member has a drum  
shape.

4. An image forming apparatus according to  
25 claim 1,  
wherein each switching <sup>2</sup>element corresponds to  
one dot of pixels of the latent image.

5. An image forming apparatus according to claim 4,

wherein a peripheral length of said image bearing member in the moving direction is an integral multiple of the dot.

6. An image forming apparatus according to claim 1,

further comprising optical communications means for inputting the image signal into each switching element.

7. An image forming apparatus according to claim 6,

wherein said optical communications means includes:

a light-receiving unit that is provided in a non-image area of said image bearing member in which no image is formed; and

a light-emitting unit that irradiates said light-receiving unit with light.

8. An image forming apparatus according to claim 1,

further comprising radio wave communications means for inputting the image signal into each switching element.

9. An image forming apparatus according to claim 1,

further comprising a developing apparatus that develops the latent image using developer,

5 wherein said developing apparatus includes a developer carrying member that carries the developer to a developing position.

10 10. An image forming apparatus according to claim 9,

wherein the developer is one-component developer including toner.

15 11. An image forming apparatus according to claim 9,

wherein the developer is two-component developer including toner and carrier.

20 12. An image forming apparatus according to claim 9,

wherein the developer is developer produced by dispersing toner in an insulation liquid.

25 13. An image forming apparatus according to claim 9, wherein a toner image is formed on said image bearing member by said developer carrying member;

said image forming apparatus further comprises density detecting means for detecting a density of the toner image formed on said image bearing member, and

5 a voltage applied to each switching element is set on the basis of a detection result of said density detecting means.

14. An image forming apparatus according to  
10 claim 9, wherein: a toner image is formed on said image bearing member by said developer carrying member;

said image forming apparatus further comprises density detecting means for detecting a density of  
15 the toner image formed on said image bearing member; and

a voltage applied to said developer carrying member is set on the basis of a detection result of said density detecting means.

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15. An image forming apparatus according to claim 9,

further comprising a plurality of image forming portions that each includes said image bearing member  
25 and said developing apparatus,

wherein said plurality of developing apparatuses contain toner in different colors.

16. An image forming apparatus according to claim 1,

further comprising transferring means for transferring a toner image formed on said image bearing member to an image receiving member,  
5 wherein each switching element generates heat during the transferring by said transferring means.

17. An image forming apparatus according to claim 1,  
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wherein each switching element includes a plurality of electrodes, and

wherein an image forming electrode, out of said plurality of electrodes, which forms the latent image  
15 is provided so as to protrude outward in comparison with other electrodes.

18. An image forming apparatus according to claim 17,

20 wherein when a length of a portion of said image forming electrode that protrudes in comparison with other electrodes is referred to as L, a cross-sectional area of a pixel of the latent image in a direction along a surface of said image bearing member is referred to as S1, a density of the pixel  
25 is referred to as D, and a cross-sectional area of said image forming electrode in the direction along

the surface of said image bearing member is referred to as S2, the following relation exists among S1, D, and S2

$$L \geq S1 \times D / S2.$$

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19. An image forming apparatus according to claim 17,

further comprising a conductive shield that covers each switching element,

10 wherein said shield includes an opening portion corresponding to said image forming electrode so that said image forming electrode is exposed.

20. An image forming apparatus according to claim 19,

15 wherein said conductive shield and said image forming electrode are covered with an insulating member.